

January 30, 2018

Torsten Clausen  
ICC Chicago Office  
160 N. LaSalle  
Chicago, IL 60601  
Torsten.Clausen@illinois.gov

**Re: Sierra Club Responses to ICC Outline for Comments on Resource Adequacy in MISO Zone 4**

Dear Mr. Clausen,

Sierra Club hereby submits these final comments on the Illinois Commerce Commission's ("ICC") proposed stakeholder process to evaluate resource adequacy needs in Zone 4 of the Midcontinent Independent System Operator ("MISO") service territory, which encompasses most of central and southern Illinois. We appreciate the opportunity to assist the ICC in determining whether there are unaddressed resource adequacy needs that require Illinois action to resolve. As requested, we have formatted our comments to make them consistency with the ICC Outline provided for this final round of comments.

Please do not hesitate to contact me with any questions or concerns about these comments or about any other aspect of Sierra Club's participation in this proceeding. In particular, Sierra Club is happy to provide support for any and all of the assertions made in this document.

**I. Resource Adequacy Standards**

**A. How should resource adequacy be defined and how does resource adequacy compare with or contrast with resiliency and reliability?**

Reliability is defined by the National Electricity Reliability Corporation ("NERC"), which the Federal Energy Regulatory Commission ("FERC") has authorized to develop and enforce reliability standards (among other responsibilities), as consisting of at least two distinct attributes: resource adequacy, and resilience against large and small grid fluctuations. In combining these two distinct attributes, the term attempts to

encompass electricity grid (“grid”) operators’ ability to provide and maintain electricity over their service areas without interruption.

Resource adequacy refers to the presence (or absence) of sufficient electricity supply (including “negawatts” from efficiency and demand response) to meet the anticipated peak electricity demand in the course of a typical day. It ultimately is measured as a bulk amount of power capacity, and the ability of that capacity to predictably produce electricity when needed.

Resiliency (or resilience) refers to the ability of the grid to respond to fluctuations. As an attribute, it is sometimes separated into voltage and frequency stability, and resilience against larger system shocks. Voltage stability, as the name suggests, refers to the consistency of voltage over time and across a grid over time; in practice it mostly comes down to the grid’s ability to balance “real” power (the usable power on the grid) with “reactive” power (the unusable power on the grid, also called phantom power). Similarly, frequency stability examines the maintenance of standard frequency across the grid over various time frames (in the United States, this is 60 Hertz, or power cycles/second). Finally, resilience against system shocks refers to the grid’s ability to maintain power for users by responding to major events that might destabilize the power grid.

**B. What entities currently address resource adequacy, how do they do so, and how sufficient are such current measures?**

The entity most directly responsible for ensuring resource adequacy in Southern Illinois is indisputably the Midcontinent Independent System Operator (“MISO”). MISO’s primary tool for ensuring resource adequacy is its operation of the Planning Resource Auction (“PRA”), a capacity auction that secures sufficient capacity to address all regional needs one year out. In addition to the PRA, MISO helps to ensure resource adequacy by passing rules enabling its constituent utilities and system operators to contract independently for capacity (to the extent they want price guarantees), either directly through bilateral contracting, which in turn often enable load-serving entities to

disengage from the PRA and instead secure capacity through their own Fixed Resource Adequacy Plan (“FRAP”).

In doing so, MISO also is regulated by FERC, whose job it is to ensure that regional grid operators (ISOs and Regional Transmission Organizations (“RTOs”)) like MISO are appropriately regulating energy and capacity markets to achieve federal reliability standards (MISO aims for a 1-in-10-year standard), at the most affordable possible prices for consumers.

This system has worked well since its inception in the early 2000s, and MISO has procured sufficient power to ensure resource adequacy in each of its 10 regions through the PRA even as the energy mix in the region has been in constant flux. Furthermore, with the exception of the 2014-15 PRA, where prices surged to around \$150 as a result of market conditions that FERC ruled were “unjust and unreasonable”,<sup>1</sup> PRA clearing prices have remained under \$100 per megawatt-hour. Going forward, and as a result, there is no reason to believe MISO’s existing systems will not continue to ensure resource adequacy.

MISO has come to this Commission apparently indicating that it does not believe this system is enough to ensure resource adequacy in Zone 4. But it made substantially the same arguments just over one year ago: on November 1, 2016, following through on a process that began in March of 2016, MISO filed a proposed “Competitive Resource Solution” (the “CRS Proposal”) at FERC, which would have bifurcated Zone 4’s capacity markets to ensure certain recovery levels for Illinois-based capacity providers. In that proceeding, in which Sierra Club protested the CRS Proposal, MISO made many of the same arguments it is now making here, and failed to convince FERC that the problem was serious enough to warrant immediate action along the lines MISO had proposed.

FERC was not pressured to approve MISO’s proposal because the proposal responded to a problem that does not yet exist, and may never exist. As explained in more detail below, MISO is wrong that any sort of fix is needed, because its interpretation of resource adequacy projections is overly conservative; it underestimates the ability of existing programs to prevent capacity shortfalls; and it ignores other tools MISO has available to respond to and address any potential shortfalls that may arise.

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<sup>1</sup> Available at [https://elibrary.ferc.gov/idmws/file\\_list.asp?accession\\_num=20151231-3026](https://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20151231-3026).

## **II. Resource Adequacy Measurement**

### **A. How much generation is currently available to meet Zone 4 resource adequacy requirements?**

In an effort to avoid undue repetition, Sierra Club refers the ICC to comments submitted by other stakeholders, including the Natural Resources Defense Council, Environmental Law and Policy Center, and Environmental Defense Fund.

### **B. What generation resources formerly meeting Zone 4 resource adequacy requirements have recently been lost due to retirement, derating, declining capacity factor, or otherwise?**

In an effort to avoid undue repetition, Sierra Club refers the ICC to comments submitted by other stakeholders, including the Natural Resources Defense Council, Environmental Law and Policy Center, and Environmental Defense Fund.

### **C. What current generation resources available to meet Zone 4 resource adequacy requirements are at risk of becoming unavailable going forward and what are the implications of the loss of such resources?**

Dynegy has submitted comments suggesting that Dynegy-operated units amounting to about 3 GW of capacity are at risk of retiring in the next few years. And Dynegy likely also will claim that more plants in its fleet may try to leave MISO for PJM, another regional grid operator whose auctions regularly result in higher electricity prices for consumers. However, Dynegy does not substantiate its claim with modeling, instead offering a basic number-crunching exercise that ignores MISO's significant current flexibility to respond to even large-scale capacity reductions without disrupting electric service.

In particular, although it has been maligned in recent years, the PRA has continued to secure more than sufficient capacity to meet demand in Zone 4 and across

its footprint. For instance, in the most recent auction total offers submitted including capacity secured in Zone 4, including through FRAPs, exceeded the Planning Reserve Margin Requirement (“PRMR”), which is the minimum amount of capacity that needs to come from within Southern Illinois, by more than 5,000 MW. As a result, actual imports into Zone 4 were significantly less than the region’s Capacity Import Limit available: only 771 of a possible 5,815 MW were imported to Zone 4.

And there is plenty of capacity made available in the broader MISO footprint: even with retirement of all resources above the \$25 conduct threshold (which are probably the facilities at the highest risk for retirement), there would still be an almost 5,000 MW surplus. As a result, the PRA clearing price was only \$1.50 for the 2017/2018 auction, but if several at-risk plants retire before new replacement capacity is in service, or if the capacity offerings in MISO Zones are “tight”, prices will go up; if new, lower cost generation resources come online and/or less generation retires, prices will go down. But in short, no evidence has yet been presented that the PRA will fail to ensure resource adequacy as long as it continues to function as designed.

Of course, fully understanding the impact of plant retirements on the grid requires conducting comprehensive modeling that examines that ability of MISO and the broader energy marketplace to fill in any needs that are created by retiring capacity assets. Particularly over the long term, this modeling may be critical to understanding what Illinois’s resource adequacy needs truly are. But between the current massive excess currently in the PRA and MISO’s OMS-MISO Surveys (discussed below), there is no immediate reason to be overly concerned about the immediate impacts of retiring 3000 MW of existing capacity.

#### **D. What are the prospects for new generation resources becoming available to meet Zone 4 resource adequacy going forward?**

In an effort to avoid undue repetition, Sierra Club refers the ICC to comments submitted by other stakeholders, including the Natural Resources Defense Council, Environmental Law and Policy Center, and Environmental Defense Fund.

**E. What non-generation resources are and may be available to meet resource adequacy and how do such resources impact resource adequacy?**

In an effort to avoid undue repetition, Sierra Club refers the ICC to comments submitted by other stakeholders, including the Natural Resources Defense Council, Environmental Law and Policy Center, and Environmental Defense Fund.

**F. How well do existing programs and initiatives predict future resource adequacy?**

The current most comprehensive public assessment of resource adequacy is a survey jointly conducted by the Organization of MISO States (“OMS”) and MISO that is published every year (the “OMS-MISO Survey”). This Survey, conducted at a high level based on questions sent out to load-serving entities and capacity-providing entities across the MISO footprint, attempts to predict future resource needs using projected continuing energy resources, planned or anticipated reductions, planned or anticipated capacity additions, demand-side load projections, and various other energy sector predictions.

Because it does not seek to comprehensively model future actions or prices, the OMS-MISO Survey is necessarily an imperfect predictor of actual capacity needs, as the ICC itself has noted. But historically, the bulk of the uncertainty with these projections has been one directional—that is, most of the uncertainty came from ignored scenarios in which there was more, not less, resource adequacy in Zone 4. This is because MISO has a demonstrated history of focusing exclusively on the worst-case scenario for all cases in its filing.

As a result, rather than taking MISO at face value when it questions the reliability of its own survey, the ICC should evaluate the survey’s accuracy by examining each of that survey’s several assumptions, and what impact those assumptions have on the projection, on an individual basis. Applying that analysis here, the most OMS-MISO Survey, conducted in 2017, projects a capacity surplus of 400 MW in 2022, even if the

worst-case projections in that survey all come to pass. In other words, in order for there to be a real resource adequacy need by 2022, each of the following would have to occur:

- 1) The OMS-MISO Survey understates resource adequacy needs by at least 400 MW;
- 2) Every resource that MISO counts as a “low certainty” resource because it may be “at risk of retirement” in fact retires;
- 3) All new capacity provider projects that are in the “Definitive Planning Phase” of the MISO queue never connect to the grid;
- 4) No additional generation in the queue that is not as far along in the approval process comes online.
- 5) In particular, renewable energy resources in Illinois fail to meaningfully develop, despite passage of the FEJA, which is expected to incent the construction of over 6 GW of new wind and solar power between now and 2025; and
- 6) No new transmission projects are placed in service to increase the supply of capacity to Zone 4 from across the MISO footprint;

Each of these events deviates significantly from what can reasonably be expected to occur based on historical data and the expected development of energy markets; and so although it is not perfect, the OMS-MISO Survey process offers at least a useful baseline for resource adequacy that the ICC should not discount.

### **III. Market Design Impact on Resource Adequacy**

#### **A. What alternative opportunities are available to resources that could otherwise be used to meet resource adequacy in Zone 4 and how do these opportunities impact Zone 4 resource adequacy?**

The most obvious alternative opportunity available to resources that might otherwise be used to meet resource adequacy, but which are not securing revenue sufficient to pay for their operations, would be to retire those resources. Sierra Club has discussed the impact of such a decision in its responses to other questions.

In the workshops so far, Dynegy has suggested that it also might relocate resources currently selling primarily or entirely into MISO over to the markets operated

by neighboring grid operator PJM, and begin selling their power into that market in an attempt to secure higher capacity prices. Indeed, Dynegy is correct that this has already occurred at some of its plants: Coffeen, Duck Creek, E.D. Edwards, and Newton all have sold into the market using pseudo-tie agreements, and Joppa just last year secured firm transmission rights to export into PJM. But pseudo-tie agreements are transitory and limited; only a limited amount of electricity can enter the PJM market from outside its geographic footprint before it begins impacting grid balance. And securing firm transmission rights, as Dynegy did with the Joppa facility, can be costly and time-intensive. Thus, it is not clear that such an investment for some of Dynegy's worse-operated plants would even pay off before they were forced to retire.

Furthermore, exporting electricity to neighboring regions allows regions also to import more electricity back from those regions. This dynamic was a key part of FERC's December 2016 ruling that overturned unjust and unreasonable rates that had artificially inflated capacity prices in MISO Zone 4: before the 2015-16 PRA, MISO had failed to account for power that was exported from Southern Illinois to elsewhere, which creates space for more power to be imported to Southern Illinois from other regions. These changes significantly reduced the amount of electricity MISO felt it could reliably import from other regions, thereby increasing its reliance on the Southern Illinois power market and needlessly tying MISO's auction prices to significantly higher PJM prices (where the exports were going). In its order, FERC required MISO change its calculations to recognize that as regions export more power, they are able to import more power to make up for the electrical imbalance that is otherwise created on transmission systems.

## **B. How does the transmission system impact resource adequacy?**

As noted in the previous section, the availability of copious transmission capability between regions in the Eastern Interconnect, including among MISO's several regions, reduces the need of individual areas to provide all of the capacity needed to ensure resource adequacy. This value is quantified each year in the PRA process, where the Capacity Import Limit (describing the maximum amount of electricity that can be reliably imported to a given region) reduces the overall resource needs of a particular



region (the PRMR), to determine the Local Clearing Requirement (describing the minimum amount of capacity that must come from within each zone). As transmission increases, so does the CIL, which in turn lowers the LCR.

There is a limit of course to this reduction, because most neighboring regions will see peak usage at around the same time. For that reason, in addition to considering the LCR for Zone 4, MISO necessarily needs to consider overall resource adequacy across its geographic footprint. However, because almost every other region in MISO is vertically integrated, with fully integrated utilities facing their own state requirements to ensure that they address their own resource adequacy needs going forward, there is little reason to suspect that Zone 4 will suddenly find itself unable to import capacity offers from neighboring regions going forward.

#### **C. How do facilities owned by municipals and cooperatives affect resource adequacy?**

In an effort to avoid undue repetition, Sierra Club refers the ICC to comments submitted by other stakeholders, including the Natural Resources Defense Council, Environmental Law and Policy Center, and Environmental Defense Fund.

#### **D. How does bilateral contracting, self-supply, and fixed resource adequacy planning affect resource adequacy?**

Again, as noted in a previous section, much of the offers into the PRA come from capacity already secured through bilateral contracting and FRAPs. This significantly reduces the volatility of capacity availability in the region because such contracts typically run at least a few years into the future, meaning they can be relied on year-to-year. In the most recent PRA, over 7700 MW of the 10,600 MW of capacity that was offered in from Zone 4 came from self-scheduled capacity plans (from bilateral contracting) and FRAPs. This actually more than covered Zone 4's Local Clearing Requirement of just over 5800 MW, and provides further insulation against large swings in resource adequacy in Zone 4.

**E. How do so-called out-of-market revenues (revenues separate and apart from those obtained in wholesale markets (e.g., Zero Emission payments or renewable energy credits) impact resource adequacy?**

In an effort to avoid undue repetition, Sierra Club refers the ICC to comments submitted by other stakeholders, including the Natural Resources Defense Council, Environmental Law and Policy Center, and Environmental Defense Fund.

**IV. Scope**

**A. Please provide commentary on any relevant substantive or process issue you believe has not been adequately captured in the Sections above.**

In order to fully discuss and understand the true impact of our energy choices, Sierra Club believes it is critical not just to look at the impact decisions could have on MISO's ability to meet reliability standards, but also at the impact these decisions could have on emission of toxic pollutants that hurt communities. Although reliability is a crucial aspect of energy regulation, and it is entirely proper to be considering what impact upcoming energy market trends might have on that reliability and how to address any changes, it is equally important to consider other impacts the energy markets are having on society, including to local economies, jobs, and the environment. This is particularly true for the ICC, which is a public entity serving the people of Illinois, and the Illinois legislature and governor, elected officials likewise charged to represent the general public. Thus, Sierra Club urges the ICC to consider the environmental impact of retiring several coal-burning power plants located in communities across Illinois, but replacing those coal plants with thousands of megawatts of new, clean energy.

**V. Potential Policy Options**

**A. What changes, if any, should be made to better enable measurement and assessment of what resources are available to meet Zone 4 resource adequacy requirements?**

In an effort to avoid undue repetition, Sierra Club refers the ICC to comments submitted by other stakeholders, including the Natural Resources Defense Council, Environmental Law and Policy Center, and Environmental Defense Fund.

**B. What changes, if any, should be made to MISO's capacity construct including to the MISO planning resource auction to better ensure resource adequacy?**

In an effort to avoid undue repetition, Sierra Club refers the ICC to comments submitted by other stakeholders, including the Natural Resources Defense Council, Environmental Law and Policy Center, and Environmental Defense Fund.

**C. What changes, if any, should be made to MISO's energy or ancillary service constructs that would help maintain resource adequacy?**

Sierra Club does not believe the ICC or any stakeholder has presented information sufficient to justify any cost-positive policy to "address" resource adequacy. However, MISO can and should change its energy and ancillary service constructs to more fully recognize and reward the significant role wind, solar, storage, and demand-side resources can play in providing resiliency to the grid.

In an effort to avoid undue repetition, for further commentary Sierra Club refers the ICC to comments submitted by other stakeholders, including the Natural Resources Defense Council, Environmental Law and Policy Center, and Environmental Defense Fund.

**D. What actions should the Illinois Commerce Commission and/or the Illinois Power Agency take, if any, to address resource adequacy assuming no new legislative authority?**

Sierra Club does not believe the ICC or any stakeholder has presented information sufficient to justify any cost-positive policy to “address” resource adequacy. With that in mind, because the ICC acts in the best interest of Illinois residents and ratepayers, it should continue to enact policies that support a transition to a cleaner, safer, and more affordable electric sector. Furthermore, Sierra Club urges the Assembly to enact long-term policies to support the long-term needs of communities and workforces that will be impacted by the inevitable transition to new energy sources.

**E. What actions should the Illinois General Assembly take, if any, to address Zone 4 resource adequacy?**

Sierra Club does not believe the ICC or any stakeholder has presented information sufficient to justify any cost-positive policy to “address” resource adequacy. With that in mind, because the Illinois General Assembly acts in the best interest of Illinois residents and ratepayers, it should continue to enact policies that support a transition to a cleaner, safer, and more affordable electric sector. Furthermore, Sierra Club urges the Assembly to enact long-term policies to support the long-term needs of communities and workforces that will be impacted by the inevitable transition to new energy sources.

**F. Please describe any additional potential policy option(s) you would like to see considered or that you would recommend not be considered.**

Sierra Club opposes all resource adequacy policy measures that might subsidize or ensure high prices to capacity providers based on a concern that they are needed to ensure resource adequacy or system reliability. If the ICC does recommend such a

course of action, at least Sierra Club urges that any such process remain public and allow for public participation.

**G. Is it important for any selected policy option to be market-based? If so, why? If not, why not?**

Again, Sierra Club does not believe the facts currently exist to justify any policy that might be designed to preserve resource adequacy. To the extent any such policy is considered, or to the extent particular areas require particular resources for a short transitory period of time, we encourage ICC to focus on market-based mechanisms, that (critically) are not only resource neutral, but actively designed to ensure all resources are able to participate fairly.

Sincerely,

A handwritten signature in black ink, appearing to read 'Gregory E. Wannier', written over a horizontal line.

Gregory E. Wannier  
Staff Attorney, Sierra Club  
2101 Webster St.  
Oakland, CA 94601  
415-977-5646  
greg.wannier@sierraclub.org  
Counsel for Sierra Club